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Productivity Perspectives

1986 Edition

AMERICAN PRODUCTIVITY CENTER

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Productivity Perspectives

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ISSN 0741-6458

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Uncertain outlook

The 1983 to 1985 period includes both the best of times and the worst of times in U.S. productivity performance. Compared to the very recent past, the U.S. recovery statistics of 1983 and 1984 seem quite good. The U.S. has also made some notable improvements in reduction of inflation and increase in research and development emphasis. A very favorable trend is showing up in unit labor costs, driven by the success in controlling inflation. Inventories have been reduced and work stoppages continue at a very low level.

But there are frightening indications at the end of 1985 that this recent productivity improvement was a minor cyclical phenomenon and that continued low rates of productivity improvement may be expected over the next few years. Furthermore, the danger appears to be greater in fast-growing non-manufacturing than in manufacturing industries.

Dominating the productivity trends, however, is the international picture. Here, U.S. productivity performance even in 1983-84 looks weak, and the unusual strength of the dollar still keeps U.S. exporters from being world competitive. The strength of the dollar continues to be fueled by relatively high real interest rates caused by the unprecedented levels of U.S. federal deficits. Without a concerted attack on the federal deficit and a more realistic dollar, the outlook for export oriented manufacturers in this country is dim. Add this prospect to apparent weakness in the service sector, and the outlook for productivity in the late '80s is uncertain at best.

Overall progress in U.S. productivity continued in 1984. Since the bottom of the recession in 4th quarter 1982, both labor and capital productivity improved faster than the long-term trend.

Figure 1 can be interpreted in the most positive of terms, since it appears that productivity has bottomed out and is headed for new highs. Unfortunately, leveling off occurring in 1985 has turned this curve into an indicator of possible future difficulties. Based on data for the first nine months of 1985, it is unlikely that 1985 labor productivity improvement will exceed 0.5 percent. Though Figure 1 demonstrates progress over an 11 year period, the peak to peak and trough to trough growth rate is not sufficient to remain highly competitive in the world economy.

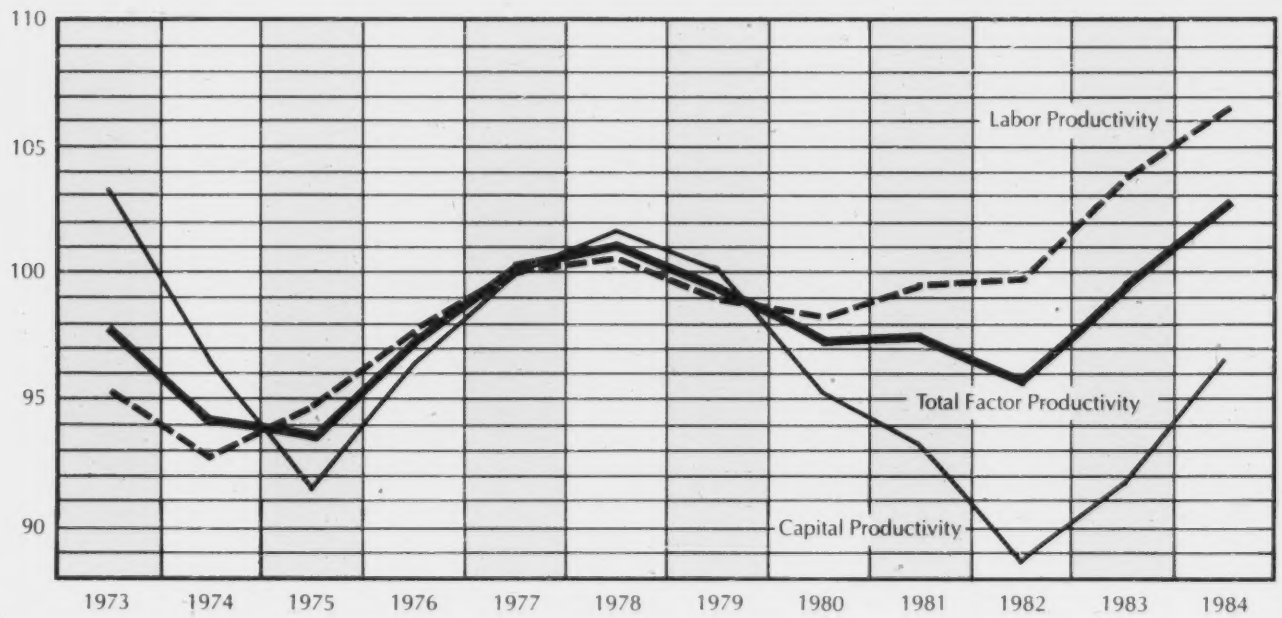
Sector variations

As usual, it is difficult to talk about the United States economy as a coordinated whole: Figure 2 demonstrates that the manufacturing sector has a much better long-term record than the remainder of the economy. Adding to already impressive growth during the early 1980s, manufacturing productivity improvement in 1985 should top 3 percent.

If productivity growth for the economy as a whole is held under 0.5 percent in 1985, it is easy to infer that the non-manufacturing sector showed negative productivity growth—a decline—in 1985. This is nothing new: Figure 2 demonstrates that for the last seven years the manufacturing sector improved much faster than the economy as a whole. The non-manufacturing sector of the economy (not officially calculated, unfortunately) must have shown essentially no progress in the 1978-1985 period.

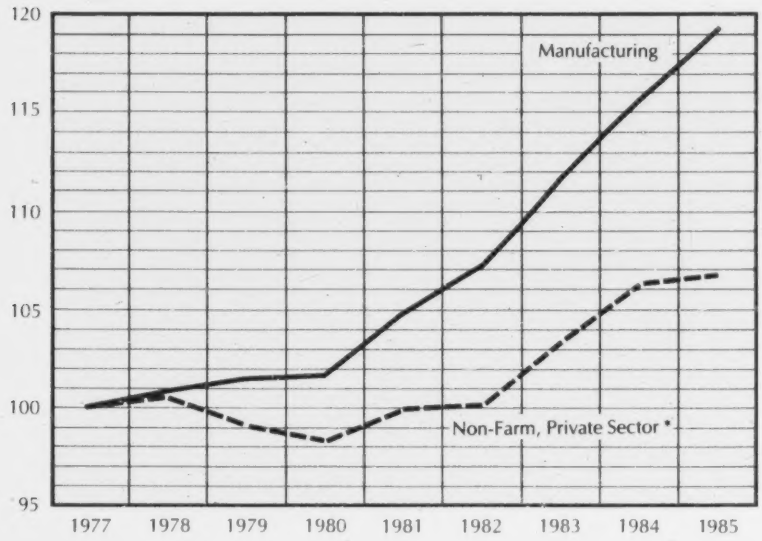
This non-manufacturing sector mainly comprises those industries now popularly portrayed as creating a "service economy" for the United States. If U.S. productivity of non-manufacturing industries doesn't improve, we are in for a tough decade in the '90s.

Figure 1
Productivity Trends in U.S. Private Businesses 1973-84



Source: Bureau of Labor Statistics

Figure 2
Labor Productivity Growth—Sector Comparisons



1977 = 100

* estimate

Source: Bureau of Labor Statistics

Figure 3
Productivity Performance Compared to Previous Recoveries

Six Quarters of Recovery	Labor Productivity Growth (annualized)
1954II - 55III	3.3%
1958II - 59IV	2.9
1960IV - 62II	4.5
1970IV - 72II	4.1
1975I - 76III	4.1
1980II - 81IV	1.3
Average, six previous recoveries	**3.4**
1982IV - 84II	3.4

Source: American Productivity Center

Of course, each industry has its own story. Many of the service industries, such as hospitals and banks, are undergoing sudden, traumatic, competitive change. The shock to operations that this represents may in the long run prove to be beneficial rather than threatening.

Recovery questioned

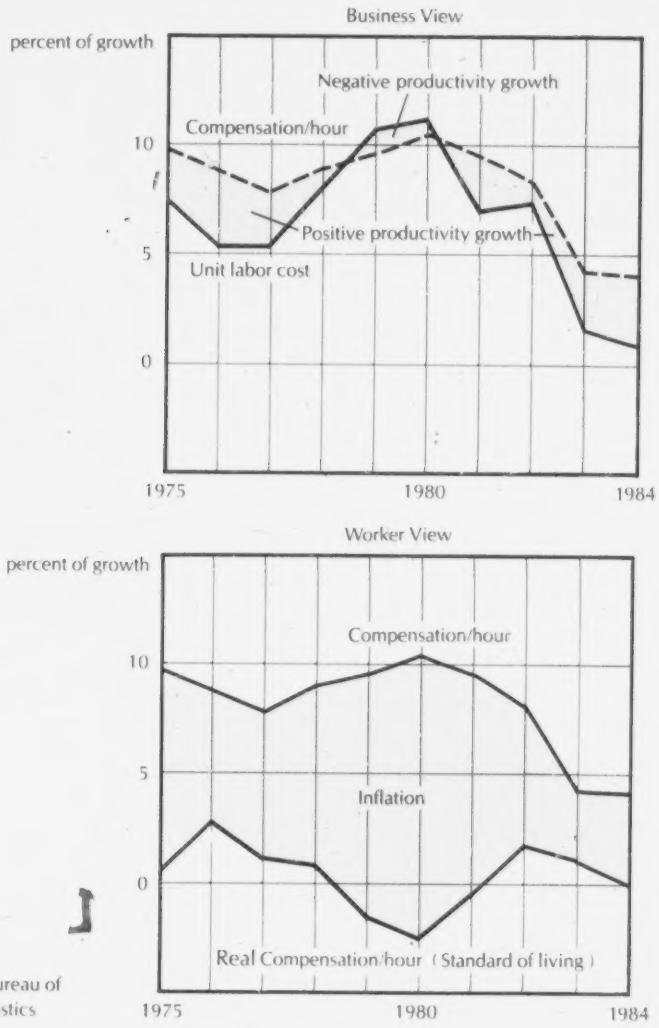
As impressive as the 1983-84 recovery looks compared to the recent past, Figure 3 shows that productivity growth during the first six quarters of the '82-'84 recovery was only average compared to the previous six recoveries. This comparison can't be extended beyond six quarters, since some of the past recoveries were quite short in calendar time. But so was this one! From the second quarter of 1984 to the second quarter of 1985, productivity growth was only 0.1 percent. It is hard to call that a period of "recovery."

Fundamentals

Digging down to fundamentals, much of the importance of these U. S. productivity growth indicators is in their relationships to unit labor costs, inflation, and standard of living, as illustrated by Figure 4.

The U.S. should be very encouraged that the 1983-84 period shows good productivity improvement accompanied by low rates of inflation and comparative restraint in compensation/hour. The expected poor productivity results of 1985 will push up unit labor costs, but the effect is dampened by continued low rates of inflation and reasonably low rates of increase in compensation/hour. Figure 4 demonstrates clearly what happens when at least one of the variables gets out of hand. The effect of high inflation in the late '70's coupled with negative productivity growth was a disastrous increase in unit labor cost. This chart also shows the basis for the fear expressed in the late '70s that we may be the first generation that bequeaths a lower standard of living to our children. Fortunately, we have seen improvement in the early '80s, but standard of living increases are still not as impressive as they could be.

Figure 4
Productivity and Standard of Living



Source: Bureau of Labor Statistics

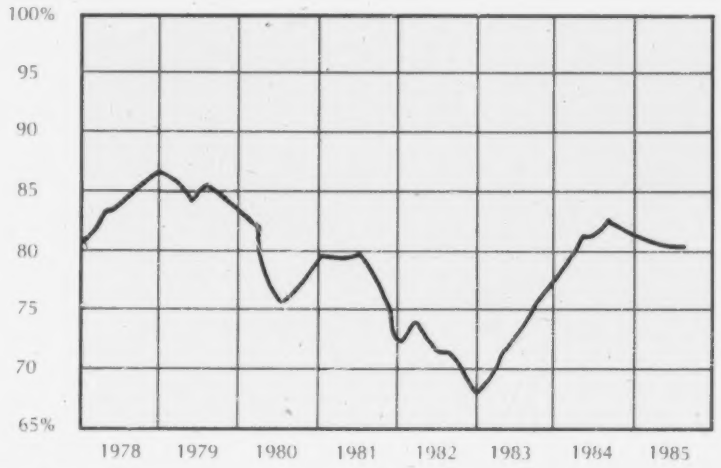
Capital impact

A major determinant of productivity improvement is the level of capital investment and utilization of the capital that is already employed in the economy. Figure 5 shows capacity utilization over the recent past, including a near peak in capacity utilization in late 1984. Since that time there has been some tailing off, but at 80 percent of utilization, the potential for further improvement is fairly small.

The level of capital investment also plays an important role in productivity improvement. It can be demonstrated that the highest long-term performers in labor productivity improvement are usually those that have received healthy amounts of capital investment. The relationship, however, is not automatic. Capital investment that may eventually prove "wise," but does not have an immediate impact, will hurt short term productivity statistics. There is also a circular question as to whether high-potential industries attract the capital infusions that let them "afford" to increase productivity, or whether increasing productivity attracts the capital investment that allows industries to grow even more.

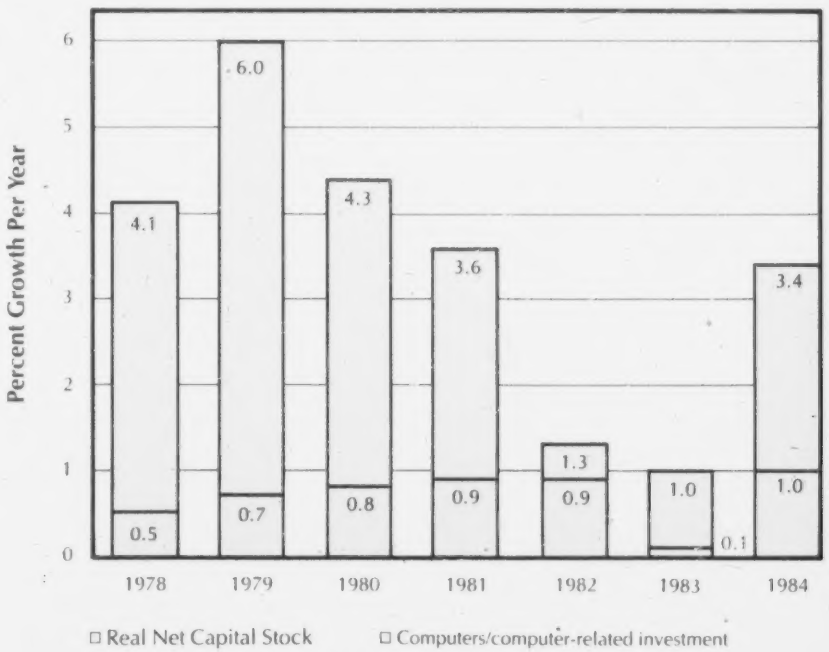
Figure 6 shows the shift in the answer to a more fundamental question. What is the nature of capital? Normally capital is thought to be heavy machinery and equipment. But note that a substantial and growing share of new capital investment now is in computers and computer related equipment.

Figure 5
Capacity Utilization—1978-1985



Source: Federal Reserve Board

Figure 6
Growth of Manufacturers' Capital Stock
(Real Net Growth Rate - 1978-84)



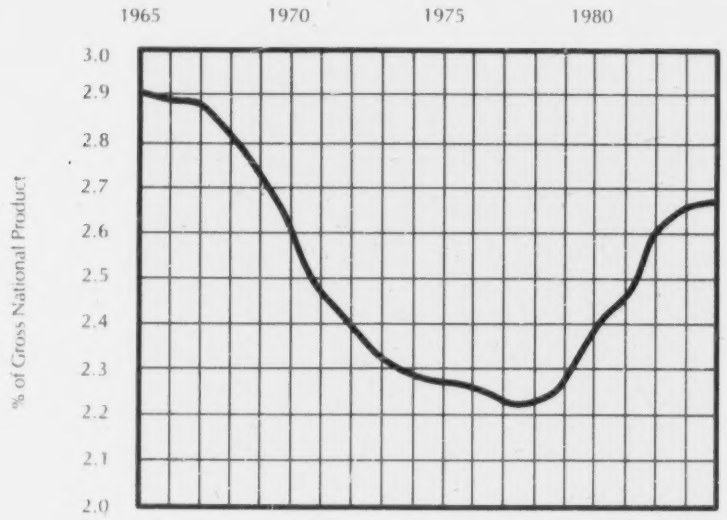
Source: Bureau of Economic Analysis

R&D

Another major determinant of productivity progress in the long run is the country's rate of conducting research and development. The effect of current research and development may take many years to be felt, but if we do not now invest in significant amounts of research, the productivity improvement of the late '80s and early '90s will be severely affected.

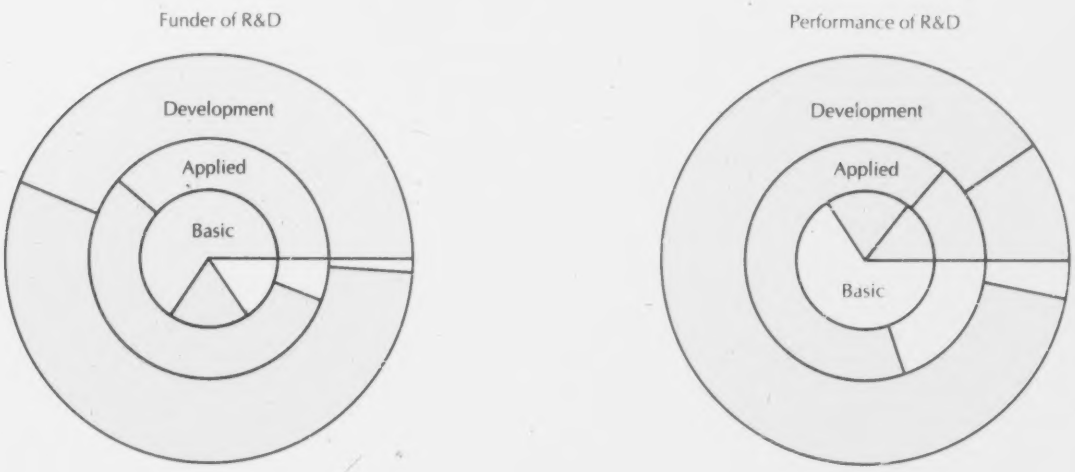
It is encouraging to note, therefore, that since the late '70s there has been a substantial reversal in the rate of U.S. research and development as a percent of Gross National Product. This rate approached a low of 2.2 percent in the late '70s but has now risen to nearly 2.7 percent. Figure 8 demonstrates the breakdown of the funding and performance of

Figure 7
U. S. Research & Development—1965-1984*



*1983, 1984 estimated
Source: National Science Foundation

Figure 8
U. S. Research & Development Performance—1984



Source: National Science Foundation

research and development among federal government, industry and non-profit organizations. Figure 9 shows how the nature of that R&D work changed between 1960 and 1984, with industry taking a much more substantial role as a funder of research and development than the federal government.

The deficit factor

The dominant factor in U.S. economic interpretation in 1985 has been the level of the federal deficit and the consequent difficulties created in funding ongoing business capital investment requirements. If it weren't for the impact of substantial inflow of foreign investment funds, there certainly would have been a capital crunch in the United States. This is illustrated by Figure 10 in the huge increase in borrowing as a percent of Gross National Product that is shown for both the federal government and the private sector. Private sector borrowing peaked at 18 percent of GNP in late '84 where its previous high had been 16 percent. Federal government borrowing in the last decade went from 2 to 6 percent of GNP. In recent quarters, private borrowing has moderated, but the federal government is still borrowing at peak levels.

Figure 9
U. S. Research & Development—1960 and 1984

	% of R&D		
Funder	**1960**	**1984**	**%Change**
Federal, Basic	5.3	8.0	2.7
Applied & Dev.	59.3	37.7	− 21.6
Industry, Basic	2.5	2.3	− 0.2
Applied & Dev.	30.9	48.6	17.7
Univ./Non-Profit, Basic	1.0	1.9	0.9
Applied & Dev.	1.0	1.5	0.5
	100.00	100.00	
Performer			
Federal, Basic	1.2	1.8	0.6
Applied & Dev.	11.6	9.3	− 2.3
Industry, Basic	2.8	2.4	− 0.4
Applied & Dev.	74.9	71.9	3.0
Univ./Non-Profit, Basic	4.9	8.0	3.1
Applied & Dev.	4.6	6.6	2.0
	100.00	100.00	

Source: National Science Foundation

Figure 10
Financing Economic Output (Borrowing as % of GNP)

	Private	+	Federal	=	Total
1973-I (recovery peak)	16%		2%		18%
1975-I (recession valley)	7		3		10
1977-III (recovery peak)	14		4		18
1982-I (recession valley)	8		4		12
1984-IV (recovery in progress)	18		6		24
1985-II (estimate)	14		5-6		19-20

Source: Goldman Sachs

Inflationary effects

Inflation also has a substantial impact on business operations and on personal well-being. The common indicators of general inflation, the GNP and the Consumer Price Index, are shown in Figures 11 and 12. These two indicators "indicate" quite different things. In some years they will differ by several percent and, even now that inflation has substantially moderated, there are still several tenths of a percentage point separating the two.

In recent years, attention has focused on energy price inflation as it relates both to energy as a consumer-purchased commodity and to energy as a utility service. Inflation in energy as a consumer product was essentially restrained by the end of 1981, but it took a couple more years to bring utilities inflation under control.

Figure 12 demonstrates that general deflators hide specific inflationary trends in sectors of the economy.

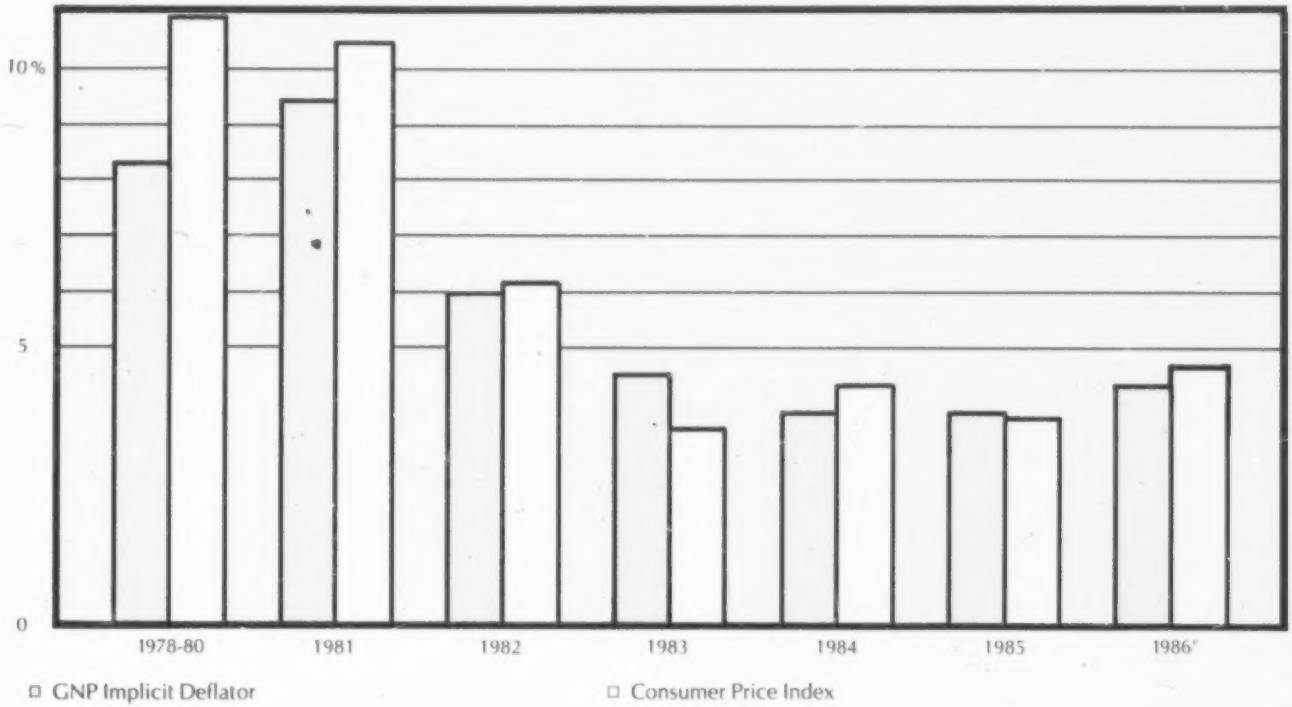
Inflation in the "all other" services category, which has

Figure 12
Specific Inflation (Percent Increase)

	1980	1981	1982	1983	1984
CPI, total	13.5	10.3	6.1	3.2	4.2
Commodities					
Food	8.6	7.8	4.0	2.1	3.8
Energy	38.6	13.0	(4.4)	(3.8)	(0.8)
All other	3.7	7.1	5.1	4.2	4.0
Services					
Shelter	NA	NA	NA	2.3	4.9
Energy	17.0	14.6	13.9	8.9	3.8
All other	6.8	8.5	8.0	3.0	5.7

Source: Goldman Sachs

Figure 11
U. S. General Inflation Rates



e = Goldman Sachs estimates
Source: U. S. Department of Commerce

recently been higher than general inflation, is heavily influenced by the poor inflation control of the medical segment of the economy. With the recent changes in Medicare rules, we can perhaps expect an improvement in the inflation rate in this sector.

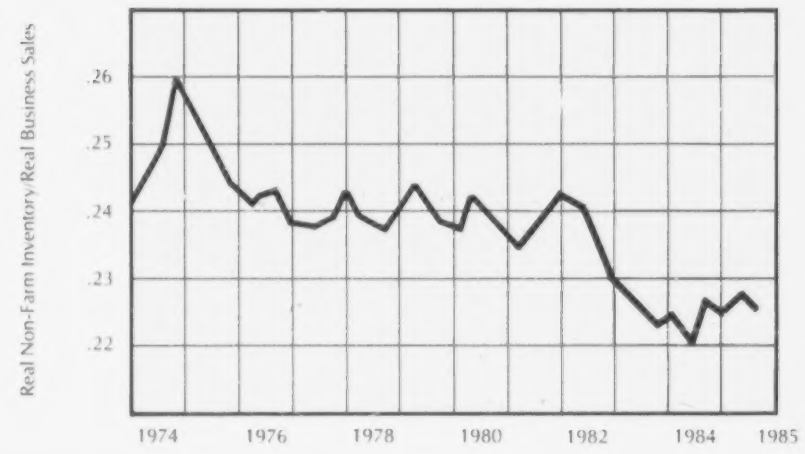
Inventory levels

One big improvement in capital allocation is the reduction in the level of inventory as a percent of sales. The high interest rates of the late '70s and early '80s eventually taught business to reduce its levels of inventory, and, thus, related carrying costs. It is somewhat ironic that substantial inventory reduction occurred only after interest rates had dropped, but "running lean" will keep these businesses in better competitive positions should borrowing costs rise again.

Work stoppages

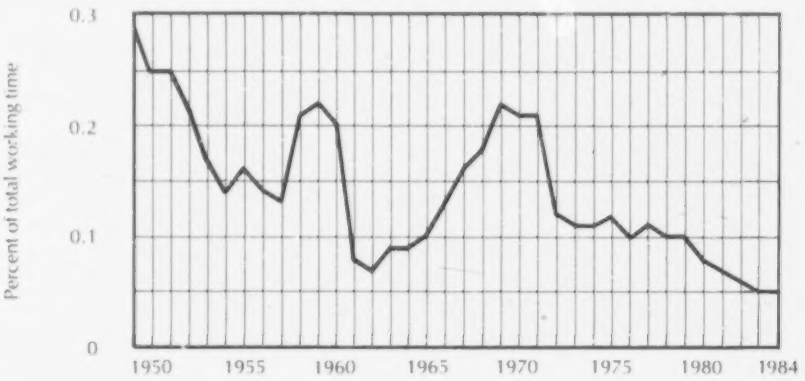
It is commonly thought that work stoppages have an influence on productivity statistics. On the contrary, Figure 14 shows that work stoppages in the United States had a relatively small and declining direct effect in the '70s and that the number of workers idle as a percent of the total work force has been less than 0.1 percent in the recent past.

Figure 13
Real Non-Farm Inventory



Source: U S. Department of Commerce

Figure 14
Work Stoppages*—1949- 1984



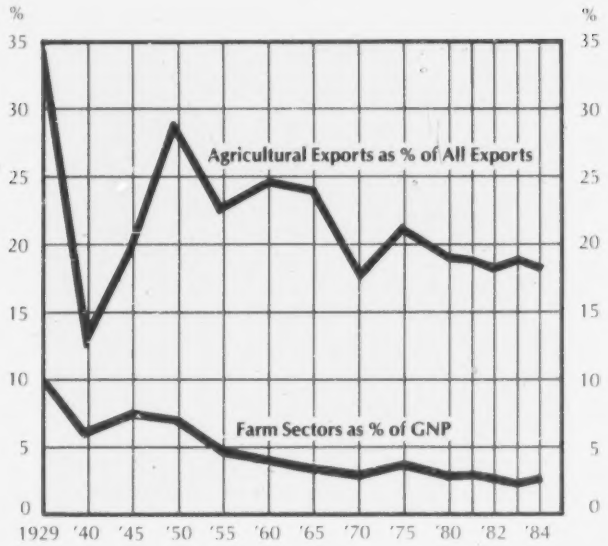
* Days idle due to work stoppages as a percent of total estimated working time, moving three-year average

Source: Bureau of Labor Statistics

Agricultural productivity

Events of 1985 again forced attention to the importance of agriculture in the U.S. economy. Aside from the political problems created by relatively low farm prices and the strong dollar, statistics show that that the agricultural sector's impact on the economy has been declining for some time. Figure 15 demonstrates that agricultural exports as a percent of all exports has declined from nearly 25 percent in the early '60s to approximately 18 percent in the early '80s.

Figure 15
The Farm Sector in the Economy



Source: The Conference Board

Diagnosis

In summary, how is the United States' productive health?

The economy staged a moderately encouraging recovery from the stagnation of the late '70s and early '80s. Several of the contributing factors to productivity improvement, notably inflation control and research and development, have shown improvements that portend better long-range economic conditions. But there are warning signs that the 1985 performance, which is substantially worse than '83 and '84, may be an indicator of harder times to come. Specifically, the nation's almost incalculably huge budget deficit puts us into a previously unanalyzed situation.

Our prognosis depends, however, on the United States' position in the international economy. Here, primarily because of the high domestic deficit and the strength of the dollar, U.S. world trade has been disastrously affected.

International Productivity Performance

Statistical limitations

Very few statistics are available to compare productivity growth rates and levels among nations consistently. The two approaches presented in Figures 16 and 17 offer a fairly clear picture of relative performance among the countries represented.

The more accurate comparison perhaps is the ratio based on Gross Domestic Product (GDP) per hour because it is closer to representing the underlying physical production process, but it is available only sporadically.

Further, since employees in different countries work substantially different numbers of hours, the two approaches can yield quite different results. These differences are less obvious in Figure 17, which represents productivity trends, than in Figure 16, which represents productivity levels.

The United States is still the world leader in level of productivity among major industrial nations. In Figure 16, both GDP/employee and GDP/hour show that France, West Germany, the Netherlands, Canada and Belgium are definitely leading competitors in productivity level. Japanese performance depends heavily on whether the input factor of the ratio is hours or employees, since the Japanese

work substantially longer hours than employees in other countries. The United Kingdom, by contrast, fares better with a GDP per hour ratio, since its workers put in fewer hours than those in the United States.

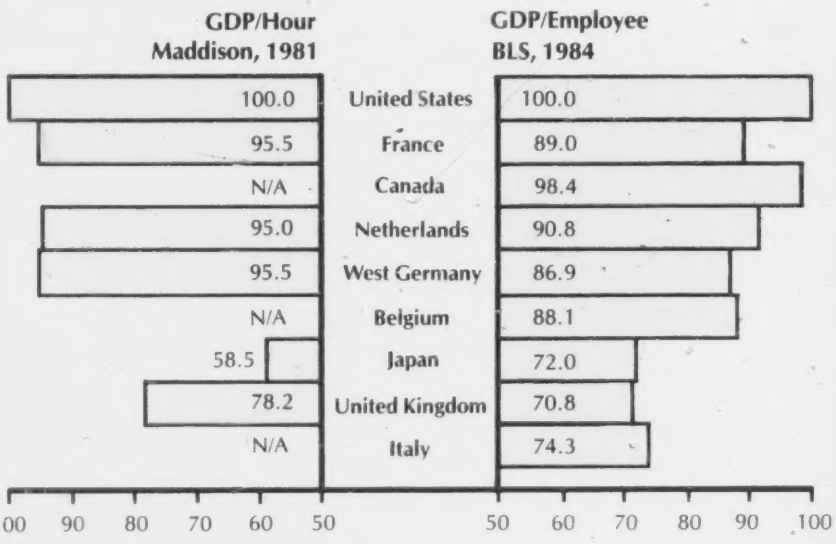
Rankings of level also are very heavily influenced by the currency exchange basis used. The Bureau of Labor Statistics numbers shown here use a purchasing power parity approach which, although steadier than current exchange rate translation would be, is still quite volatile. Nevertheless, it looks as if the strength of the U.S. dollar has prevented the countries of Europe from replacing the United States as the world's most productive nation. This strength certainly has caused other difficulties, but at least it retards the "fall" of the United States as the leading productivity country.

U.S. productivity growth lags

Figure 17, on the other hand, illustrates quite another story. While the U.S. remains the most productive major nation in the world today, its productivity *growth rate* seriously lags that of its leading competitors.

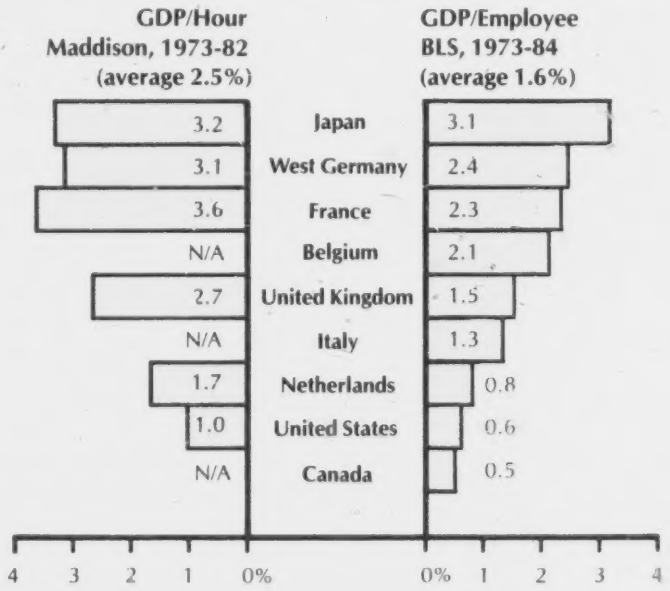
Japan has long been the growth leader, with a still substantially higher rate of productivity growth than its most formidable European competitors, West Germany and France. In the "per hour" calculation, for example France's rate in the last decade is higher than that of Japan. In either case, the United States brings up the rear. It is likely that if comparable statistics were available, the Pacific Basin insurgents of Singapore, Hong Kong, Korea and Taiwan would all show higher performances than even Japan.

Figure 16
International Productivity Levels



Source: Angus Maddison; Bureau of Labor Statistics

Figure 17
International Productivity Growth



Source: Angus Maddison; Bureau of Labor Statistics

Refined comparisons

This rough picture of relative international productivity can be refined through a lens of manufacturing labor productivity statistics, which are more reliably and frequently available to economists. Figure 18 shows growth statistics that use calculations in each country's own currency. But this chart, too, demonstrates the fallacy of relaxing because of "good American performance in 1984." The 3.5 percent growth in manufacturing labor productivity in the U.S., great as that appears compared to its recent past, finishes next to last among the list of the other manufacturing countries. In other words, the U.S. recovered, but its competitors recovered more impressively.

The most basic indicator of a nation's productivity is GNP per capita. Though this says as much about social conditions as it does about economic conditions, it can still be used as a rough indicator of the economic condition of a country.

Figure 19 presents the top 50 countries of the world in terms of GNP per capita and regional location. The United States is still the leader among major industrial countries, but several small, "special situation" countries have passed the United States. Most of the major countries of Europe are at a range of 75 to 90 percent of the level of the United States. The lowest ranking countries of Europe are being passed by some of the stronger economies of the Pacific Basin and Latin America.

It gives one cause to ponder world poverty to note that the other 57 countries not on this list are those where GNP per capita is at best only 10 percent of that in the U.S.

Figure 18
International Manufacturing Labor Productivity

	1973-80	1980-83	1984
	(average annual percent growth)		
Japan	7.0%	6.6%	9.5
Sweden	2.5	3.2	6.8
Italy	3.7	2.2	6.3
France	4.6	4.7	5.0
West Germany	4.0	3.1	4.7
Canada	1.6	2.3	4.0
United Kingdom	1.2	5.2	3.9
United States	1.3	3.6	3.5
Norway	2.1	2.1	1.7

Source: Bureau of Labor Statistics

Figure 19
Level of GNP per Capita for the Top 50 Countries—1982

$000 /capita	Western Hemisphere	Europe	Pacific Basin	Africa & Near East
13.3+		Switzerland Norway Sweden		United Arab Emirates Kuwait Saudi Arabia
13.2	United States			
10.0-13.1	Canada	Denmark West Germany France Netherlands Finland Belgium	Australia Japan	
6.0-9.9	Trinidad	Austria United Kingdom Italy	New Zealand	Libya Oman
2.5-5.9	Venezuela Uruguay Argentina	Spain Ireland Greece Yugoslavia Romania	Singapore Hong Kong	Israel South Africa
1.4-2.4	Mexico Brazil Chile Panama Paraguay Columbia Costa Rica	Portugal Hungary	Korea Malaysia	Algeria Jordan Syria Tunisia

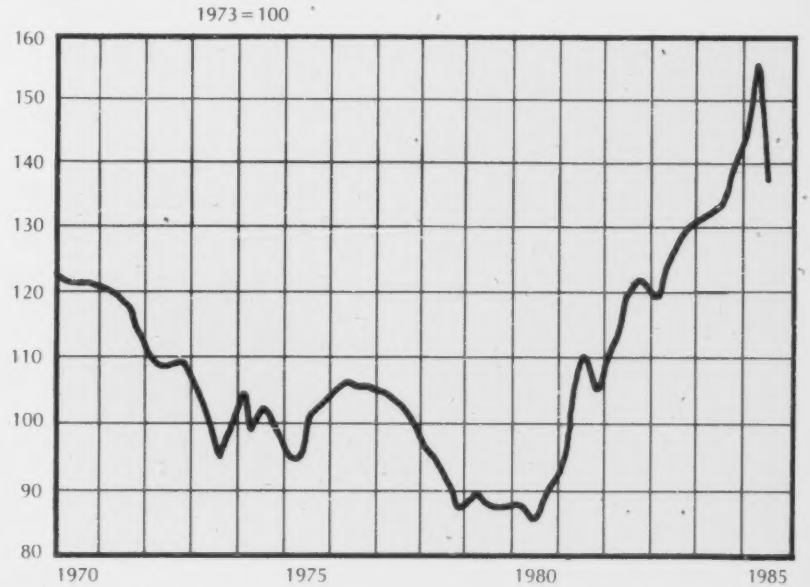
Source: World Bank

"Super dollar"

The last edition of this report emphasized the unprecedentedly high trade deficits and strong dollar. In 1985, the precedents were shattered again. Both the U.S. federal deficit and the value of the greenback against foreign currencies have set new records. Figure 20 shows the dollar trade-weighted exchange rate where, on a basis of 1973 = 100, the early 1985 peak reached 155. It later fell back to approximately 138 on a comparable scale, due to concerted intervention by the major industrial countries. But there is a long way to go to bring the value of a dollar down to where the chronic trade deficit will be affected.

One reason the dollar remains strong is that real long-term dollar exchange rates are still comparatively high. Table 21 shows the state of world money markets in September 1985. It deducts the inflation rate for the last 12 months from the nominal interest rates, both short and long term, to calculate real short- and long-term interest rates. Thus, the implicit U. S. short-term rate is in the middle of the world range. But on a long-term basis, the U.S. and Canada are more than 2 percentage points over everybody else in the world. As long as this situation continues, foreigners will invest in dollars, thus helping finance the huge U.S. debt and reducing the pressure for corrective action on the deficit in this country.

Figure 20
U. S. Dollar Trade-Weighted Exchange Rate



Source: U. S. Department of Commerce

Figure 21
Money Markets—September 1985

	Nominal Interest Rates			Real Interest Rates	
	3 month money market	long term government bonds	last 12 months inflation	short term	long term
United States	7.7	10.7	3.4	4.3	7.3
Canada	8.9	11.1	4.0	4.9	7.1
France	9.6	10.9	5.6	4.0	5.3
Italy	14.3	13.5	8.3	6.0	5.2
West Germany	4.7	6.8	2.1	2.6	4.7
United Kingdom	11.5	10.4	6.2	5.3	4.2
Japan	6.3	6.0	2.4	3.9	3.6

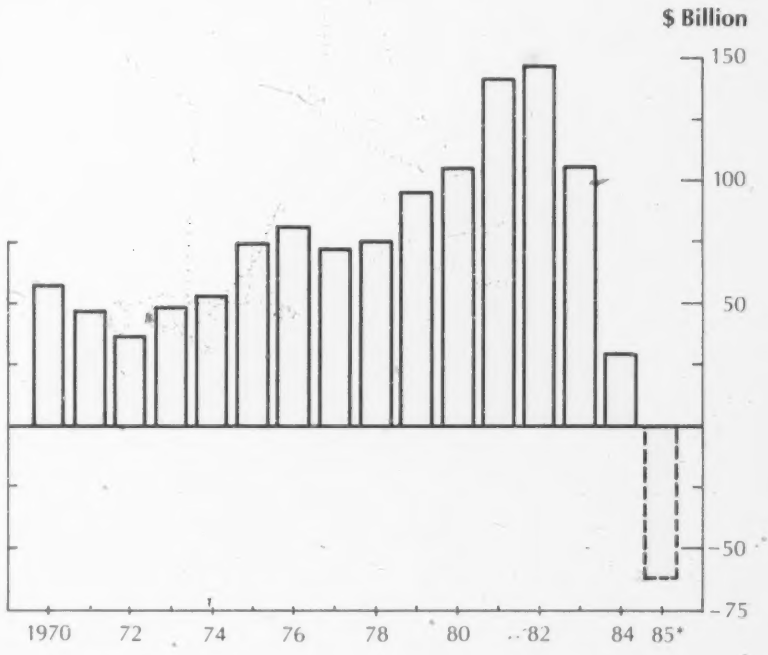
Source: The Economist

Trade balance

Figure 22 shows the magnitude of the U.S. trade problem. In 1983, the U.S. export/import ratio was 0.78, the worst among major industrial countries. In 1984 that ratio fell to 0.64, worst by a huge factor. The magnitude of the deficit shown, $123 billion, was actually surpassed in 1985 and the trend remains negative. In contrast, Japan shows a $34 billion surplus and West Germany a $19 billion surplus.

A consequence of the bad trade balance, as illustrated in Figure 23, is that the U.S. has now become a "debtor nation" for the first time since 1914, owing more to foreigners than it is owed itself. This is an abrupt change from as recently as 1982, when the U.S. was owed a net $150 billion. Figure 24, though calculated on a slightly different basis than Figure 22, presents the historical data on merchandise versus agricultural trade balance.

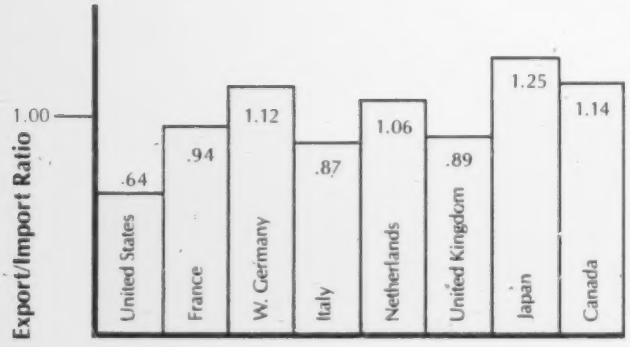
Figure 23
Net U. S. Foreign Investment—1970-1985



*June estimate

Source: Departments of Commerce, Treasury

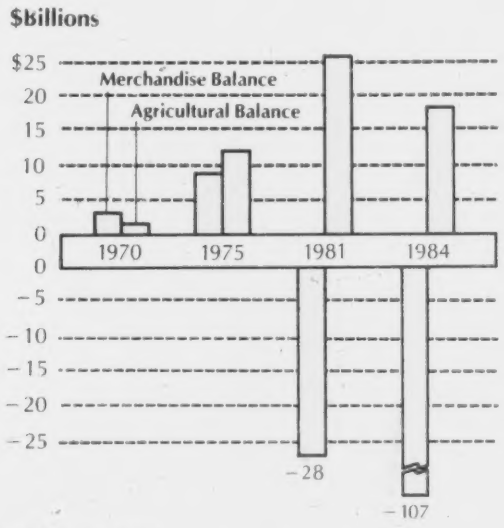
Figure 22
International Balance of Trade—1984



Exports (FOB)		Imports (CIF)
	$ Billions	
$217.9	United States	341.2
97.3	France	103.6
171.6	West Germany	152.6
73.4	Italy	84.3
65.7	Netherlands	62.0
94.1	United Kingdom	105.2
170.1	Japan	136.5
86.9	Canada	76.1

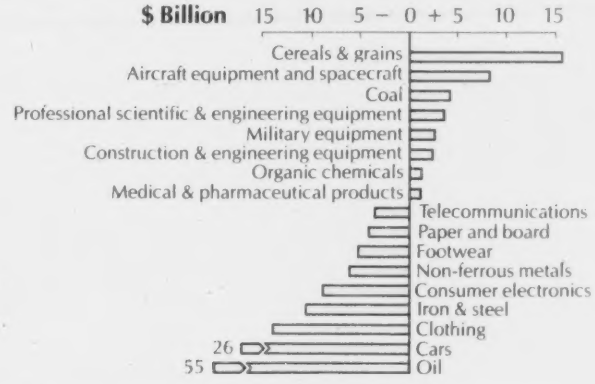
Source: Organization for Economic Cooperation and Development

Figure 24
U.S. Merchandise vs. Agricultural Trade Balance—1970-84



Source: The Conference Board

Figure 25
U. S. Trade Balance by Product—1984



Source: Department of Commerce International Trade Administration
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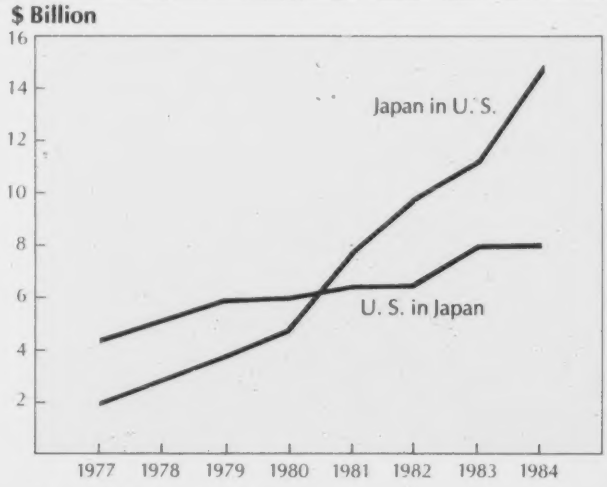
Figure 25 breaks this trade balance deficit into types of products, showing clearly that oil and autos account for approximately two-thirds of the gap. Other problem areas are clothing, iron and steel, and consumer electronics. On the plus side are U.S. grain exports and both defense and scientifically oriented high tech products.

Another indicator of the consequences of running a deficit in trade with Japan is that the direct investment balance has shifted very substantially in favor of Japan, as shown in Figure 26. Japanese investment in the United States is increasing at a high rate, and not only in the U.S. auto industry. Though U.S. investment in Japan is growing, it is growing at a much slower rate and is generally not in "critical" industries.

Figure 26
U. S.—Japan International Direct Investment Balance—1977-84



Source: Department of Commerce

Another consequence of the strong dollar, reflected in trade balance weakness, is the much publicized weakness in the U.S. machine tool industry. Machine tools are the building blocks of manufacturing performance, and it is particularly embarrassing that the U.S. lose share in an industry it has historically dominated. Figure 27 shows that U.S. machine tool exports have been declining since 1981 and machine tool imports, much of them from Japan, have been increasing.

Basic economies

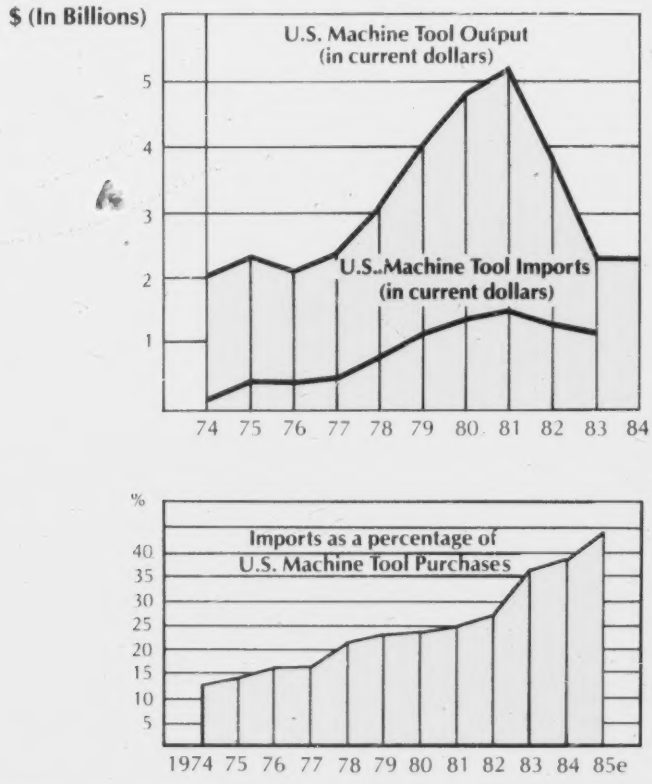
Looking beyond trade balances to the basic economic condition of the other countries of the world, we can see in Figure 28 that we are not alone with our difficulties. In fact, 1984 growth in GNP in the U.S. led all major world countries. The U.S. inflation rate was in the mid range, as was its unemployment rate. Many of our competitors still have both double-digit inflation and double-digit unemployment.

Comparative misery

Economists sometimes combine inflation and unemployment in the "Misery Index," whose performance is shown in Figure 29. On this basis, the U.S. appears much less miserable than its European competitors. And U.S. misery waned substantially from 1982 to 1985. We still have a long way to go to reach the relatively low levels of misery in Japan and Switzerland, but both of these countries have a history of low inflation rates that makes them somewhat uncomparable.

The focus on unemployment also may hide progress that is being made in employment. The unemployment rates do not take into account different working and cultural habits between

Figure 27
Machine Tool Trends



Source: National Machine Tool Builders' Association

Figure 28
World Economic Factors

	GNP Growth		Inflation		Unemployment
	Average		Average		
	1972-83	1984	1972-83	1984	1984
United States	2.3	6.7	7.2	4.3	7.4
West Germany	1.9	2.5	5.0	2.4	8.6
France	2.5	1.7	10.5	7.4	9.7
United Kingdom	1.6	2.0	12.9	4.9	13.0
Italy	2.2	3.0	16.9	10.8	10.2
Canada	2.8	4.2	9.1	4.3	11.2
Netherlands	1.8	1.2	6.8	3.3	14.0
Spain	2.6	2.2	16.1	11.3	20.1
Australia	2.5	6.2	11.1	3.9	8.9
Belgium	2.1	1.7	7.6	6.3	14.0
Sweden	1.7	3.2	10.4	7.5	3.1
Switzerland	0.4	2.5	4.8	2.8	1.2
OECD Total	2.5	4.5	8.4	5.3	8.2

Source: Organization for Economic Cooperation and Development

countries. In many countries, women still stay home. Several European countries have immigrant work forces that they can expel when times worsen. Further, Figure 30 shows that the United States is practically alone in the world in having increased its employment-to-population ratio between 1975 and 1983. Such a positive trend in the employment statistic is a favorable economic indicator. And though level comparisons are more culturally dependent, it's comforting to note that employment at about 67 percent of total population in the U.S. is well ahead of France, at around 60 percent, and West Germany, at 59 percent. Still, employment in the U.S. lags that of Sweden, at 78 percent, and Japan, at 72 percent.

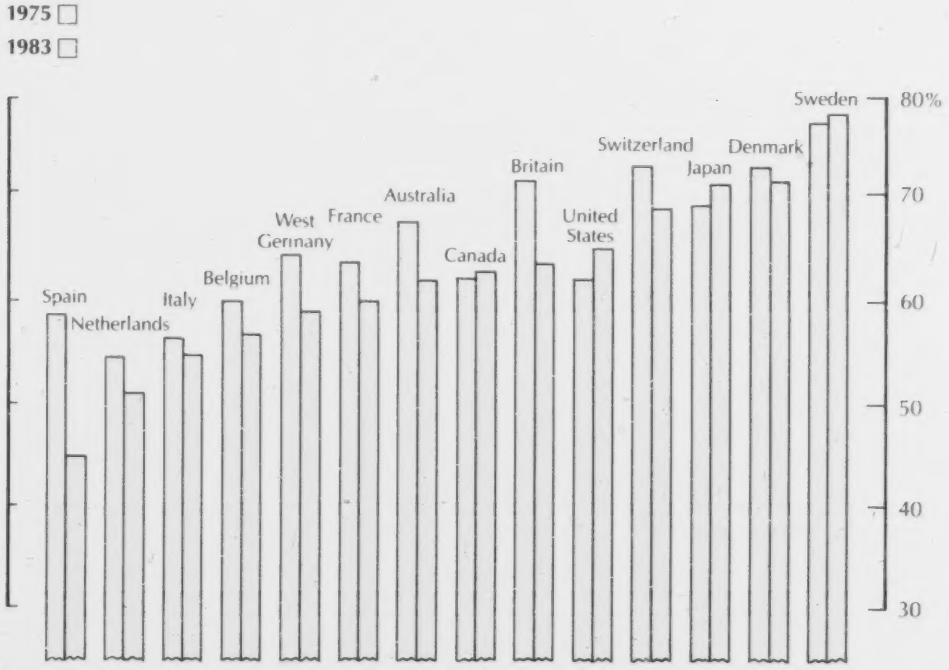
Figure 29
Misery Index*

	1975	1982	Aug. 1985
United States	24	25	17.4
Japan	15	7	7.6
European Economic Community	20	27	
West Germany			20.7
France			25.4
United Kingdom			32.6
Italy			33.5
Canada			24.6
Sweden			12.1
Switzerland			4.6

*Consumer price inflation rate (last 12 months) plus twice unemployment rate.

Source: The Economist

Figure 30
Employment/population ratio*—1975 and 1983



*Total employment divided by the population of working age (15-64 years).

Source: Organization for Economic Cooperation and Development, © The Economist

Recent statistics are not available to compare R&D among international competitors. Figure 31 does not yet reflect the U.S. increase to approximately 2.7 that occurred in recent years, but even 2.7 puts the U.S. only on par with West Germany and still behind the U.S.S.R.

Savings and investment

Figure 32 shows international savings and investment in 1983.

There are several ways of looking at this influential area. The United States shows up as unusually low in savings as a percent of disposable income. Virtually everyone in the world saves at double-digit levels, while the U.S. saves at a 5 percent rate. In 1985, this rate declined further. Capital formation as a percent of GNP also is quite a lot lower in the U.S. than in Japan, but most of the other countries of the world are not very different from the U.S. in this regard.

When capital formation is put on a net savings basis, after normal depreciation needs, the remainder represents availability for genuinely new investment. Here the U.S. has quite a bit less "mad money" than France, West Germany or even Italy. This is in some respects a reflection of the maturity of the U.S. economy, but also should discourage us from thinking we can invest our way to short-term rapid improvement.

Figure 31
Comparative R&D as Percent of GNP

	Average Annual Ratio		
	1961-65	1971-75	1981
USSR	2.7%	3.6%	3.5%
West Germany	1.5	2.3	2.7
Japan	1.4	1.9	2.4
United States	2.8	2.4	2.4
United Kingdom	2.4	2.1	2.2*
France	1.6	1.8	2.0

Source: National Science Foundation

* estimate

Figure 32
International Savings and Investment—1983

	Savings as % of Disposable Personal Income	Capital Formation as % of GNP	Net National Savings as % of GNP
United States	5.0	16.7	3
France	14.9	19.8	7
West Germany	12.7	20.6	9
Italy	24.0*	18.1	7
Netherlands	13.0	18.1	10
United Kingdom	10.9	16.3	NA
Japan	17.3	28.4	16
Canada	13.3	19.9	8

*1982 data

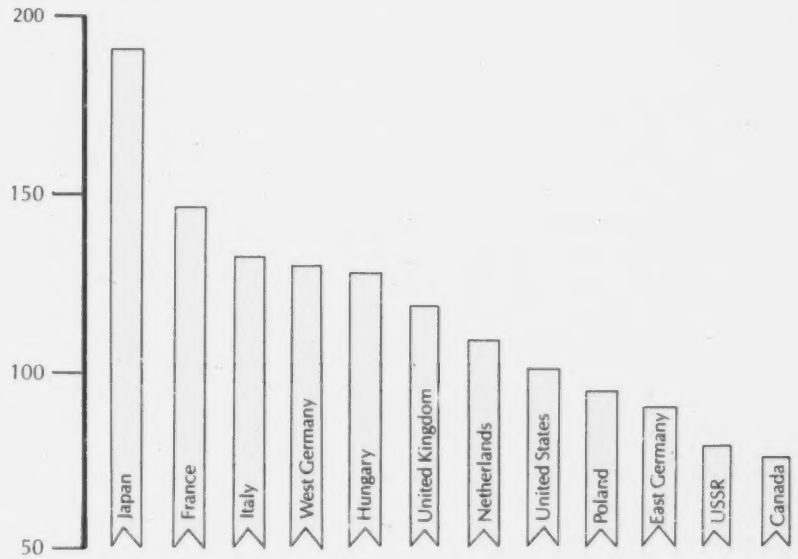
Sources: U. S. Department of Commerce, Organization for Economic Development and Cooperation, World Bank, © The Economist

Energy, food, taxes

One difficult to interpret area of comparative performance is in energy productivity, illustrated in Figure 33. It is very difficult to compare economies because they have a different "product mix" and relatively different physical distribution conditions. Nevertheless, these numbers show that Japan and the major European countries use substantially less energy per dollar of GNP than does the U.S. The only major countries with a lower number are the U.S.S.R. and Canada, both of which, because of their size, have an even more difficult physical distribution situation.

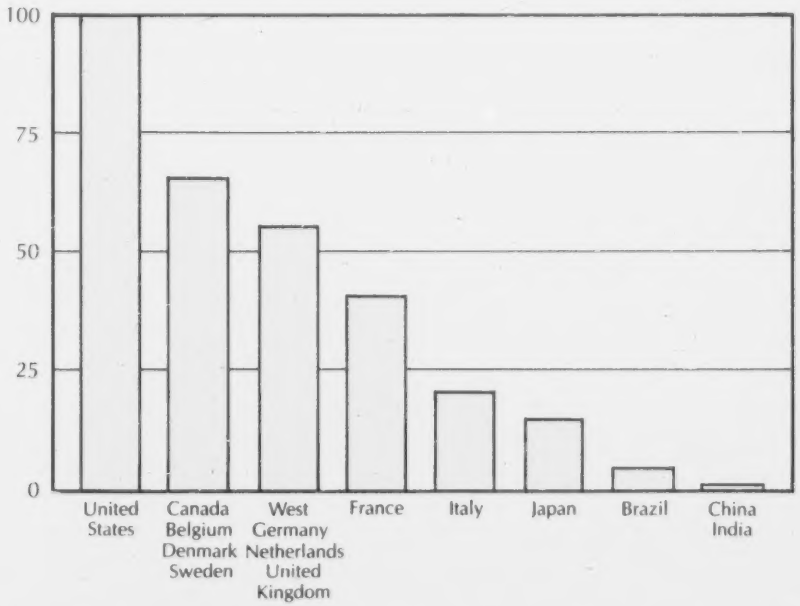
The U.S. still does have a very substantial advantage in comparative agricultural productivity (Figure 34). This calculation can only be called an approximation, but setting the U.S. level of value added per agricultural population at 100, no one else in the world does better than about 65 and much of Europe is between 40 and 55. In comparison, China and India perform at around 1 percent of the agricultural productivity of the United States.

Figure 33
Comparative Energy Productivity*—1982



*GNP/Energy use relative to the U. S. Source: Central Intelligence Agency

Figure 34
Comparative Agricultural Productivity*—1982



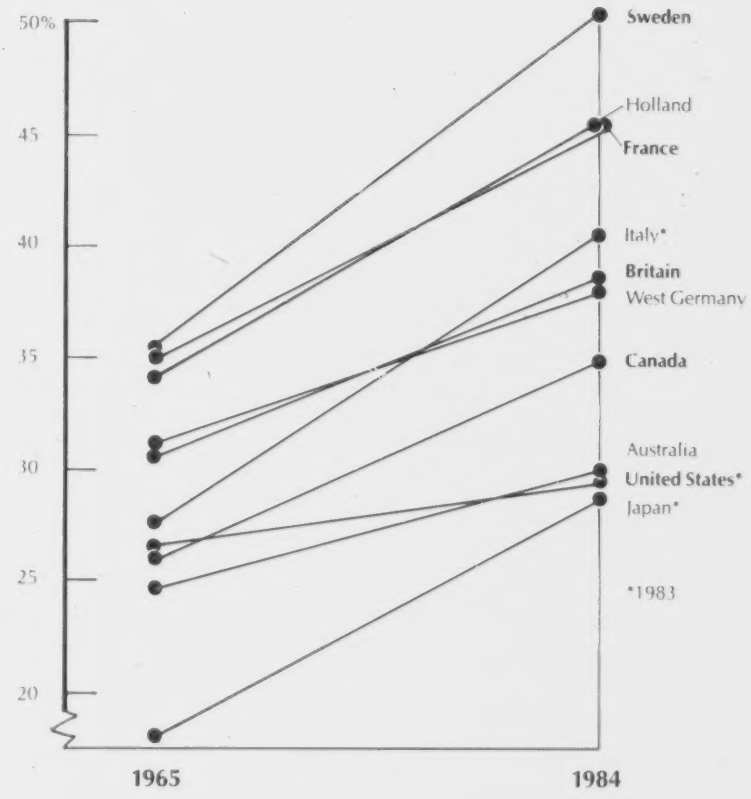
*Approximate value added/agricultural workforce relative to the United States. Source: World Bank

Finally, to counter U.S. citizens' complaints about their tax burden, it should be noted in Figure 35 that the U.S. is next to last among major countries in terms of total tax revenues as a percent of GDP. Only Japan has a slightly lower percentage. And the U.S. in the period 1965-1984 has the lowest rate of growth in tax as a percent of Gross Domestic Product. Whereas the European countries have grown from somewhere in the 30- to 35-percent range to approaching 50 percent in some countries, the U.S. has only gone from 27 to 28 percent of GDP.

Conclusion

In summary, the United States' position as the world's most productive nation remains in jeopardy. The economic gains of the recent recovery seem not to have been enough to counter the downward trend in U. S. productivity growth, particularly in the non-manufacturing sector. Meanwhile, the nation's chief competitors seem to continue to achieve productivity gains despite, in many cases, less favorable domestic economic conditions than we in the United States enjoy.

Figure 35
Total Tax Revenues as % of Gross Domestic Product—1963-84



Source: Organization for Economic Development and Cooperation, © The Economist

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Productivity Perspectives

1986 Edition

UPDATE

AMERICAN PRODUCTIVITY CENTER

The information below updates Figures 16 and 17 (page 11). It is based on Bureau of Labor Statistics data released February 5, 1986.

U.S. still losing its productivity lead

The Bureau of Labor Statistics' latest figures on U.S. and international gross domestic product (GDP) per employee show our industrial competitors edging closer to the U.S. absolute level of productivity. And the numbers on relative rates of productivity growth show why: other countries are simply improving their productivity faster than we are. The charts below incorporate correct Organization for Economic Cooperation and Development purchasing-power parity figures; a recent comprehensive benchmark revision of the U.S. national accounts that shifts the base period for calculation of constant dollar estimates from 1972 to 1982; and rebenchmarking the Japanese constant price national accounts from 1975 to 1980.

Relative International Productivity Levels
GDP/Employee
(Purchasing-power-parity basis)

Country	Revised 1980	Revised 1984
United States	100.0	100.0
Canada	97.8	98.6
Netherlands	98.4	96.5
France	91.6	94.1
Belgium	92.0	93.3
West Germany	89.1	92.4
Italy	80.5	78.8
United Kingdom	70.8	75.2
Japan	68.4	73.5

International Productivity Growth
GDP/Employee

Country	1980–84 average
Japan	2.8%
United Kingdom	2.6%
West Germany	1.9%
France	1.7%
Belgium	1.4%
Italy	0.5%
Netherlands	0.5%
Canada	1.2%
United States	1.0%

Since these numbers do not yet reflect the terrible U.S. performance in 1985 (zero growth in labor productivity), the gap should narrow further when 1985 statistics are released.